

REMARKS

Claims 1-14 and 67-68 are pending in the present application. Claim 1 is here amended, and claims 15-16 have been canceled. Support for the amendments to claim 1 can be found in the specification, for example, at page 15, lines 19-21 and lines 27 to 28, and page 27, line 26. No new matter has been added.

Applicants thank the Examiner for helpful comments in a telephone conference of February 25, 2004.

CLAIM REJECTIONS

The claims have been rejected for indefiniteness, anticipation and obviousness. The rejections are traversed for reasons described below.

Rejection under U.S.C. § 112, second paragraph

The Examiner, on page 2, paragraph 3A of the Office Action, maintained rejection of claims 15 and 16 under 35 U.S.C. § 112, second paragraph, for being indefinite for reciting “substantially an entire chromosome” or “substantially an entire genome”. Applicants have canceled claims 15 and 16, therefore Applicants request that this rejection be withdrawn.

Rejections under U.S.C. § 102(b)

The Examiner, on page 4, paragraph 3B of the Office Action, has maintained rejection of claims 1, 2, 6, 7, 12-17, 67 and 68 under 35 U.S.C. § 102(b) in view of Huang *et al.*, Human Mol. Genetics 8:459-470, 1999. The Examiner states that Huang shows hybridization of human genomic DNA digested with the restriction enzyme MseI, which generates fragments ranging from 100-200 base pairs in an array.

Applicants here amend claim 1 to limit the size of the cloned nucleic acid insert in each vector for each probe in the instant array to greater than about 50 kilobases. The standard for a reference to anticipate a claim is that the reference must teach each and every limitation of that claim. Huang does not show probes in an array having cloned inserts in vectors that are greater than about 50 kilobases, so this reference does not teach every limitation of amended claim 1.

Claims 15 and 16 have been canceled. Pending claims 2, 6, 7, 12-14, 17, 67 and 68 all depend either directly or indirectly from claim 1, and so take on all of the limitations of claim 1.

As all of the claims as here amended are novel in view of Huang *et al.*, Applicants respectfully request that this rejection of the claims be withdrawn.

The Examiner, on page 4, paragraph 3C of the Office Action, has maintained rejection of claims 1-8, 12, 14-17, 67 and 68 under 35 U.S.C. § 102(b) in view of Cronin *et al.*, Human Mutation 7:244-255, (1996). However, Cronin does not disclose cloned inserts of vectors for probes in an array of size greater than about 50 kilobases, which is an element of claim 1 as amended here.

Claims 15 and 16 have been canceled. Claims 2-8, 12, 14, 17, 67 and 68 all depend either directly or indirectly from claim 1, and so take on all of the limitations of claim 1. As Cronin does not show cloned inserts into vectors having a length greater than about 50 kilobases for probes in an array, so this reference does not provide a limitation of claim 1. Therefore, Applicants request that this rejection be withdrawn.

Rejections under U.S.C. § 103

The Examiner, on page 5, paragraph 3D of the Office Action, has maintained rejection of claim 9 under 35 U.S.C. § 103(a) over Cronin *et al.*, in combination with Waggoner *et al.*, U.S. Patent No. 5,268,486. The Examiner states that Cronin teaches all of the limitations of claim 1 and Waggoner teaches the cyanine dyes from claim 9.

Applicants here amend claim 1, to include limitation to a minimal size of inserts in the vectors that are used as probes on the array. This size limitation which is not taught or suggested by Cronin. Waggoner does not cure this deficiency of Cronin, as this reference also fails to teach or suggest the limitation in claim 1 as amended here. Therefore the size limitation of the probes on the array is not obvious from the teachings of Cronin and Waggoner, alone or in combination. Therefore, Applicants request that this rejection be withdrawn.

The Examiner, on page 6, paragraph 3E of the Office Action, has also maintained the rejection of claim 10 under 35 U.S.C. § 103(a) over Cronin in light of Anderson *et al.* Nucl. Acids Res. 9:3015-3027 (1981). The Examiner stated that Cronin teaches the limitations of claim 1, and that Anderson teaches that the size of the fragments of enzymatic digestion can be varied by adjusting the DNase concentration and teaches probes of a size of about 300 to 1000 base pairs on the array.

However, neither of these references teaches or suggests that probes in the array be made from a vector having cloned inserts of size greater than 50 kilobases (50,000 bases). Anderson's largest disclosed length is about 50 fold shorter than the minimum size of the inserts used to make the probes on the array as provided in claim 1 as amended herein. This size limitation of the inserts for probes on the array is not obvious from the teachings of Cronin and Anderson, alone or in combination. Therefore, Applicants request that this rejection be withdrawn.

The Examiner, on page 7, paragraph 3F of the Office Action, maintained the rejection of claim 11 under 35 U.S.C. § 103(a) in view of Cronin in combination with Anderson and Ordahl *et al.*, Nucl. Acids Res. 3:2985-99 (1976). The Examiner states that Ordahl teaches using shear forces before digesting a nucleic acid with a DNase.

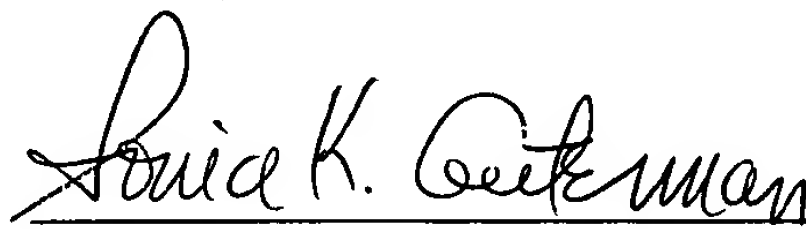
However, Ordahl does not teach or suggest that probes on an array be made from cloned inserts of a size greater than about 50 kb. The size limitation of the inserts in vectors for the probes on the array is not obvious from the teachings of Cronin, Anderson or Ordahl, alone or in any combination. Therefore, Applicants request that this rejection be withdrawn.

CONCLUSION

On the basis of the foregoing amendments and remarks, Applicants respectfully submit that the pending claims are in condition for allowance.

If the Examiner has any questions regarding these amendments and remarks, the Examiner is encouraged and invited to contact the undersigned at the telephone number provided below.

Respectfully submitted,

A handwritten signature in cursive script, reading "Sonia K. Guterman", is written over a horizontal line.

Sonia K. Guterman, Reg. No. 44,729
Attorney for Applicants
c/o Mintz, Levin
Telephone: (617) 542 6000
Fax: (617) 542 2241
Customer No. 30623

Dated: March 10, 2004